

ELECTROACTIVE POLYMER TRANSDUCERS AND  
ACTUATORS

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ABSTRACT OF THE DISCLOSURE

The present invention relates to electroactive polymers that are pre-strained to improve conversion from electrical to mechanical energy. When a voltage is applied to electrodes contacting a pre-strained polymer, the polymer deflects. This deflection may be used to do mechanical work. The pre-strain improves the mechanical response of an electroactive polymer. The present invention also relates to actuators including an electroactive polymer and mechanical coupling to convert deflection of the polymer into mechanical work. The present invention further relates to compliant electrodes that conform to the shape of a polymer. The present invention provides methods for fabricating electromechanical devices including one or more electroactive polymers.

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